

Remarks/Arguments:

The present invention relates to radio communication over an ad-hoc network. Specifically, time slot communication reservations are confirmed or prohibited based on scheduled usage.

On page 2, the Official Action rejects claims 1-5 and 14-19 under 35 U.S.C. § 103(a) as being unpatentable over Liu (U.S. Patent No. 7,103,371) in view of Mano (U.S. Patent No. 6,778,586). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Liu teaches an ad-hoc network that utilizes a Time Division Multiple Access (TDMA) frame architecture which allows the reservation of time slots. Mano teaches a communication system that also utilizes TDMA. Specifically, the communication device selects a vacant time spot for communicating.

Applicants' invention as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

a step in which a fourth radio communication device sends reservation request information to the third radio communication device, when the third radio communication device sends reservation response information to the fourth radio communication device for:

- 1) confirming the reservation request if the time slot is not prohibited,**
- 2) rejecting the reservation request if the time slot is prohibited.**

Claim 1 relates to a procedure wherein a fourth communication device sends a reservation request for reserving a time slot. Upon receiving the reservation request the third communication device sends reservation response information to the fourth communication device which either confirms or rejects the reservation. A confirmation may be sent if the time slot is available and a rejection may be sent if the time slot is not available. This feature is

found on pages 33 and 34 of the specification and furthermore in Fig. 7. No new matter has been added.

In Column 11, lines 1-60, Liu teaches that a communication device makes a reservation in order to communicate. This reservation is then notified to all neighboring nodes (*"node has made a reservation ... and provides each node with a reservation information of neighboring nodes within two hops from that node ... to avoid utilization of the same slots A transmitting node as reserved ... the determined slot should avoid collision since the node has reservation information of neighboring nodes within two hops"*). Thus, all the nodes within communication range are notified of the reservation. In similar art, Mano teaches communication devices selecting a vacant time slot for communicating. This feature is recited in Column 4, lines 5-10, of Mano (*"vacant slot detector which finds out at least one vacant slot number based on the obtained slot number to select its own slot number from among the found vacant slot numbers"*). Thus, Mano's system is able to detect a vacant time slot and then use that vacant time slot for communication.

Applicants' claim 1 is different than Lui and Mano because the addition of the step wherein a communication device can confirm or reject a reservation request from another communication device (*"a step in which a fourth radio communication device sends reservation request information to the third radio communication device, when the third radio communication device sends request response information to the fourth radio communication device for: 1) confirming the reservation request if the time slot is not prohibited, 2) rejecting the reservation request if the time slot is prohibited"*). This feature is found on page 33 and 34 of the specification and furthermore in Fig. 7. For example, radio device 103 transmits a reservation request to radio device 104. In response, radio device 104 sends a reservation response which confirms a particular time slot in which to communicate. Since radio device 102 is also in the communication area of both radio devices 103 and 104, radio device 102 also receives the reservation request and thereby registers this time slot as a prohibited time slot (device 102 or any other device within range cannot use the prohibited time slot for communication). Therefore, if another radio device 101 transmits a request to radio device 102, radio device 102 must check whether the requested time slot is prohibited or not. If 102 decided that request time slot is not prohibited, then 102 will transmit a reservation response which confirms the reservation of the time slot to 101 (time slot can be used for communication between 101 and 102). If 102 decides that the requested time slot is prohibited, then 102 will transmit a reservation response which rejects the reservation of the time slot to 101 (time slot

cannot be used for communication between 101 and 102). During operation, if 101 receives a rejection for a particular time slot, it simply transmits another request which requests a different time slot. This process will continue until a non-prohibited time slot is eventually agreed upon. Thus, Applicants' third radio communication device as recited in claim 1 is able to confirm the reservation request by the fourth radio communication device or reject the reservation request by the fourth radio communication device.

It is because Applicants include the feature of "*a step in which a fourth radio communication device sends reservation request information to the third radio communication device, wherein the third radio communication device sends reservation response information to the fourth radio communication device for call in number 1) confirming the reservation request if the time slot is not prohibited, 2) rejecting the reservation request if the time slot is prohibited*", that the following advantages are achieved. An advantage is the ability for a radio communication device to confirm or reject a reservation from a radio communication device which is ignorant to the available and prohibited time slots in the communication area. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claim 14 has been similarly amended to claim 1. Thus, claim 14 is also patentable over the art of record for the reasons set forth above.

Claims 2-13 and 19-23 include all the features of claim 1 from which they depend. Thus, claims 2-13 and 19-23 are also patentable over the art of record for the reasons set forth above.

Claims 15-18 include all the features of claim 14 from which they depend. Thus, claims 15-18 are also patentable over the record for the reasons set forth above.

Appln. No.: 10/574,595
Amendment Dated April 29, 2008
Reply to Office Action of February 21, 2008

MAT-8834US

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



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Dated: April 29, 2008

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